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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

NGUYEN, SANG H

ART UNIT PAPER NUMBER

2877

DATE MAILED: 01/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/092,942

Applicant(s)

HIPP, JOHANN

Examiner

Sang H Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 March 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 March 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the “**a light deflection device**” in claims 8-10 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Information Disclosure Statement

3. The information disclosure statement filed on 06/18/02 and 08/23/02 fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56© most knowledgeable about the content of the information, of each patent listed that is not in the English language. It has been placed in the application file, but the information referred to therein has not been considered.

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In other words, the foreign references DE 3514982 C2 (Publication Date 10/31/85), EP 0486430 A2, DE 295000873 U1, DE 4411448 A1, DE 19828000 C2, DE 3134851 C2, DE 3514982 C2 (Publication Date 04/06/86), DE 3915627 C2, DE 3833022 C2, DE 4040894 C1, DE 4137550 A1, DE 4340756 A1, DE 3701340 C2, DE 19512644 A1, and DE 19936440 A1 are not in the English language, and applicant has failed to provide a concise explanation of the mentioned foreign references.

Applicant should provide an English abstract of the mentioned Germany references, and such an English abstract has been considered.

Claim Objections

4. Claim 1 is objected to because of the following informalities: the term “pulse-like light signals” should be changed to --pulse light signals--. Appropriate correction is required.

Specification

5. The following guidelines illustrate the preferred layout and content for patent applications. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

The following order or arrangement is preferred in framing the specification and, except for the reference to the drawings, each of the lettered items should appear in upper case, without underling or bold type, as section headings. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

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- (a) Title of the Invention.
- (b) Cross-Reference to Related Applications.
- © Statement Regarding Federally Sponsored Research or Development.
- (d) Reference to a "Sequence Listing," a table, or a computer program listing appendix submitted on compact disc (see 37 CFR 1.52(e)(5)).
- (e) Background of the Invention.
 - 1. Field of the Invention.
 - 2. Description of the Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (f) Brief Summary of the Invention.
- (g) Brief Description of the Several Views of the Drawing(s).
- (h) Detailed Description of the Invention.
- (I) Claim or Claims (commencing on a separate sheet).
- (j) Abstract of the Disclosure (commencing on a separate sheet).
- (k) Drawings.
- (l) Sequence Listing, if on paper (see 37 CFR 1.821-1.825).

With respect to present invention, Applicant should provide all the "headings" as listed above into the specification.

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Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Endo (U.S. Patent No. 4,634,272).

Regarding claim 1; Endo discloses an apparatus for determining a distance profile, comprising:

- * a light transmitter (21 of figure 1) for transmitting pulse light signals (Lt of figure 1) in the direction of a monitored space (figure 1);

- * a light receiver (22 of figure 1) for receiving light reflected/remitted signals (Lr of figure 1) from the monitored space (figure 1); and

- * an evaluation unit (23 of figure 1) for determining distance values in dependence on the light transit time (figure 4) between the transmission and reception of the light signals (Lt, Lr of figure 1 and claims 12);

- * wherein the light transmitter (21 of figure 1) is designed for the simultaneous transmission of a plurality of light signals (Lt of figure 3) in the direction of a plurality of reflection remission points (42,43,44 of figure 2) disposed in the monitored space and spaced apart from one another (figure 3); and

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* wherein the light receiver (22 of figure 1) includes a plurality of photodiodes (26a,26b,26c of figure 1 and col.3 lines 19-34) for receiving of light reflected/remitted signals (Lra,Lrb,Lrc of figure 3) by the reflection/remission points (42,43,44 of figure 3). See figures 1-6.

Regarding claim 2; Endo discloses the evaluation unit 23 of figure 1) for calculating distance values (Ra,Rb,Rc of figure 3) based on the light transit time (figure 4) between the transmission of the plurality of light signal (Lt of figure 3) and the reception of the light signals (Lra,Lrb,Lrc of figure 3) by three or more photo-sensitive elements (26a,26b,26c of figure 1) with each distance value (Ra of figure 3) being associated with a photo-sensitive element (26a of figure 1).

Regarding claim 3; Endo discloses the plurality of transmitted light signals (Lt of figures 1 and 3) are component of a fan shape light bundle (figures 1 and 3).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 4-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Endo (U.S.

Patent No. 4,634,272) in view of Araki et al (U.S. Patent No. 4,656,462).

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Regarding claims 3-4; Endo is shown to teach all of features in claimed invention except for the plurality of transmitted light signals are component of a fan shape light bundle, wherein the fan shape light bundle extends in one plane. However, Araki et al teaches that it is known in the art to provide the plurality of transmitted light signals (LBs of figure 1 and col.4 lines 8-20) are component of a fan shape light bundle (figures 1 and 3), wherein the fan shape light bundle (figures 1 and 3) extends in one plane (figure 1). It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide apparatus for determining a distance profile of Endo with the plurality of transmitted light signals are component of a fan shape light bundle, wherein the fan shape light bundle extends in one plane as shown in the device of Araki et al for the purpose of determining the distance on basis of the amount of the transmitted/reflected light and object.

Regarding claim 5; Endo is shown to teach all of features in claimed invention except for the light transmitter for projecting light signals on a line of light. However, Araki et al discloses that it is known in the art to provide the light transmitter (11 of figure 1) for projecting light signals on a line of light (GF of figure 1). It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide apparatus for determining a distance profile of Endo with the light transmitter for projecting light signals on a line of light as shown in the device of Araki et al for the purpose of determining the distance on basis of the amount of the transmitted/reflected light and object.

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Regarding claims 6-7; Endo discloses the light transmitter (21 of figure 1) is a semiconductor laser (col.1 line 13-14) and the light receiver (22 of figure 1) is a photodiode row (figures 5-6).

10. Claims 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Endo and Araki et al as applied to claim 1 above, and further in view of Pierenkemper (U.S. Patent No. 6,509,958).

Regarding claims 8-10; Endo is shown to teach all of features in claimed invention except for a light deflection device is provide at the light transmitter. However, Pierenkemper teaches that it is known in the art to provide a light deflection device (30 of figure 3) is provide at the light transmitter (4 of figure 3), wherein the light deflection device (30 of figure 3) for deflecting of a fan shape light bundle (3 of figure 3) in a direction perpendicular to the plane of the object (5 of figure 3). It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide apparatus for determining a distance profile of Endo with the light deflection device as shown in the device of Saunders for the purpose of causing the light beam to repeatedly scan over the surface of the object.

Regarding claim 11; figures 5-6 of Endo discloses the light receiver (26) is made a two dimension photodiode array (figure 6).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Metzdrorff et al (5,048,950) discloses optical radar; Haag (4,742,337) discloses light

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curtain area security system; Blumcke et al (6,100,539) discloses light sensor with evaluation of the light transit time; Blohbaum (5,805,468) discloses method and apparatus for determining the light transit time over a measurement path arranged between a measuring apparatus and a reflecting object; Saunders (4,896,343) discloses radiation apparatus with distance mapper for dose control; Koechner (4,902,126) discloses wire obstacle avoidance system for helicopters; Dahl et al (5,291,261) discloses optical object detection system incorporating fiber optic coupling; or Argast (DE 42 15 272) discloses transmitter, receiver and evaluation circuit for detection time difference between zero crossing of signals.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Sang Nguyen whose telephone number (703)308-6426. The examiner can normally be reached on Monday through Friday from 8:30 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Frank Font, can be reached on (703)308-4881. The fax phone number for the organization where this application or proceeding is assigned is (703)308-7722 or 7724.

Snguyen/SN



January 21, 2003



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